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# East Europe Report

SCIENTIFIC AFFAIRS
(FOUO 2/81)



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# EAST EUROPE REPORT SCIENTIFIC AFFAIRS (FOUO 2/81)

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# CZECHOSLOVAKIA

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CZECHOSLOVAKIA

1980 LIST OF CHEMICAL FERTILIZERS AVAILABLE IN CSSR PUBLISHED

Bratislava AGROCHEMIA in Slovak No 10, Oct 80 supplement pp 1-20

[Supplement by Eng Juraj Korim, Research Institute of Agrochemical Technology, Bratislava: "Survey of the Assortment of Industrial Fertilizers in 1980"]

[Text] Introduction

This survey contains the basic technical and commercial information on industrial fertilizers supplied by the Agricultural Supply and Purchase (PZN) enterprises. The most common type of packaging and the market price in this packaging are given for sales to agricultural producers, including those provided from central supplies.

The nutrient content is given for an average batch, calculated as oxide in the case of phosphorus and potassium, with the proportions of the elements themselves given in parentheses. The minimum, i.e. required, contents of nutrients are given in accordance with existing standards, again in terms of oxides for phosphorus and potassium.

The bulk density is an average value for the substance when freshly, freely poured without shaking or settling.

In the table of market prices, wherever possible we chose the packaging so as to make it possible to compare interchangeable fertilizers or fertilizers of similar character without the influence of other factors. The prices of nutrients in multicomponent fertilizers were calculated by multiplying the proportion of each nutrient by its price in the basic single-component fertilizer (4.10 Kcs for N, 5.35 Kcs for  $P_2O_5$  and 1.40 Kcs for  $K_2O$ ). The results were compared with the market price of the fertilizer and the prices of the nutrients adjusted proportionately. For completeness, we also included in the table the price of ammonia water, even though this involves direct deliveries outside of the PZN enterprises, and the price of amoniakat [ammonium nitrate-ammonia solution] which is used in the production of multicomponent fertilizers.

We have not included special fertilizers containing trace nutrients, humus fertilizers, or peat or limestone materials supplied by PZN enterprises to agricultural producers and gardeners. In view of their special character we will publish a list of these, along with their retail prices, in future issues.

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#### FUR UFFICIAL USE UNLY

In contrast to previous listings, the names of the fertilizer producers are added in the present version, in abbreviated form. They are: the national enterprises of VHJ Unichem Pardubice (Sintezia East Bohemian Chemical Plants, Pardubice-Semtin; Chemicke Savody [Chemical Plants], Sokolov), and of VHJ Slovchemia, Bratislava (Chemicke Zavody J. Dimitrova [J. Dimitrov Chemical Plants], Bratislava; Duslo Sala; Chemko Strazske; Povazske Chemicke Zavody (Povazske Chemical Plants] Zilina; Fosfa Postorna), and the plants of the Chemmetropol concern in Prague (Chemicke Zavody Ceskoslovensko-Sovetskeho Pratelstva [Czechoslovak-Soviet Friendship Chemical Plants] Zaluzi (Krusne Horg); Severoceske Chemicke Zavody [North Bohemian Chemical Plants] in Lovosice; Spolana Neratovice, Moravske Chemicke Zavody [Moravian Chemical Plants] Ostrava; and Prerovske Chemicke Zavody [Prerov Chemical Plants], Prerov).

[Note: The following abbreviations are used: CHZ [Chemical Plants]; MCHZ [Mor [Moravian Chemical Plants]; PCHZ [Povazske Chemical Plants]; SCHZ [North Bohemian Chemical Plants]; CHZ CSSP [Czechoslovak-Soviet Friendship Chemical Plants]; VCHZ [East Bohemian Chemical Plants]; PrCHZ [Prerov Chemical Plants]; CHZJD [Dimitrov Chemical Plants]]

Single-Component Nitrogen Fertilizers

Ammonium Sulfate--SA

Active ingredient:

Nutrient content:

Packaging/price:

Appearance:

CSN 65 2242 [Czecho-

slovak state standard]

Fine crystals, colorless or pinkish

21 percent N

Ammonium sulfate (NH4)2SO4

Bulk, 85.65 Kcs per 100 kg

Ammonia nitrogen, min. 20.5 percent (synthetic),

min. 20.3 percent (from coking plant)

Free H<sub>2</sub>SO<sub>4</sub>, max 0.2 percent

Moisture, max 1.0 percent (synthetic), max 1.5 per-

cent (from coke plant)

Passage through mesh: 0.25 mm, max 20 percent

(synthetic)

0.2 mm, max 20 percent (from coke plant)

Other properties:

Physiologically acidic fertilizer--soil must be limed for repeated use. Gives off ammonia above

100°C. Bulk density about 0.9 tons/m3'

Producer

CHZ Sokolov, MCHZ Ostrava, Spolane Neratovice, PCHZ Zilina, metallurgical coking plants, gas

refineries, import

Calcium Cyanamide--DV

Active ingredient:

Calcium cyanamide CaCN 2

Nutrient content:

Nitrogen 19.2 percent (nonoil-treated),

18 percent (oil-treated)

Packaging price:

75-kg paper bags, 209.90 Kcs per 100 kg

2

Appearance: CSN 65 4904: Fine black-brown powder, with carbide odor Nonoil-treated, min 19.8 percent nitrogen Oil-treated, min 18.0 percent nitrogen

Residual calcium carbide, max 1.5 percent (nonoil-

treated) and 2.0 percent

Retained by screen with 0.5 mm openings, max

2 percent

with 0.2 mm openings, max 20 percent with 0.09 mm openings, max 40 percent

Other properties:

DV is a physiologically alkaline fertilizer. It contains nitrogen in cyanide and amide form.

Also has pesticidal effect.

Note:

Bulk density 1.1 tons/m3 Should be stored in dry, covered, well-ventilated areas, stacked a maximum of 4 high. When handling, health protection procedures must be strictly observed, and the upper respiratory passages, and sensitive parts of the skin and eyes must be protected from the powder. Alcoholic beverages may

not be consumed. CHZ Sokolcv, import

Producer:

Calcium Nitrate--LV

Active ingredient:

Calcium nitrate Ca(NO3)2 with water of crystalliza-

Nutrient content:

Packaging/price:

Other properties:

Appearance: CSN 65 4905: tion 16.2 percent N

50-kg polyethylene bags, 83.90 Kcs per 100 kg White or grayish, partly irregular granular material

Total N, min 15.0 percent

Ammonia nitrogen, max 1.5 percent

Percentage of particles smaller than 0.6 mm,

max 5.0 percent larger than 5.0 mm, max 4.0 percent LV is a physiologically alkaline fertilizer containing nitrogen in nitrate form. It is hygroscopic and

deliquences in air. Bulk density 1.0 tons/m3

Producer:

MCHZ Ostrava, SCHZ Lovosice

Ammonium Nitrate With Limestone--LAV 30 or 25

Active ingredient:

Nutrient content: Packaging/price:

CSN 65 4903 and

65 4906:

Appearance:

Ammonium nitrate NH4NO3, with added limestone CaCO3 30.5 percent or 25.2 percent N, roughly half as

ammonia and half as nitrate

50-kg polyethylene bags, 145.90 Kcs per 100 kg of

LAV 30 and 120.90 Kcs per 100 kg of LAV 25 Grayish or brownish spherical granules. Total N, min 29.5 percent or 24.5 percent

Moisture, max 1.5 percent

Particles smaller than 0.6 mm, max 5.0 percent larger than 5 mm, max 2.0 percent

Flowability, min 80 percent

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#### FUR UFFICIAL USE UNLY

Other properties:

The physiological reaction of LAV is neutral. It may be stored stacked a maximum of 10 bags high. It cakes easily and must be stored in dry, covered

areas. Bulk density up to 1.0 tons/m

Producer:

MCHZ Ostrava, SCHZ Lovosice

Ammonium Nitrate With Dolomite--LAD 27.5

Active ingredient:

Nutrient content: Packaging/price: Appearance:

Ammonium nitrate NH4NO;, with added dolomite MgCa(CO3)2

27.5 percent N, as ammonia and nitrate 50-kg polyethylene bags, 131.90 Kcs per 100 kg Gray, dark gray or dark red or black granules

Total N, min 26.8 percent PND 54-013-77

Particles smaller than 1 mm, max 5 percent

1-4 mm, min 85 percent

Duslo Sala, import

larger than 10 mm, max 0.5 percent Flowability, min 90 percent Physiologically neutral fertilizer.

Other properties:

Bulk density 0.95 tons/m<sup>3</sup>

Producer:

Note:

Contains anticaking additive.

Ammonium Nitrate--LA, Nitrate C33

Active ingredient:

Nutrient content: Packaging/price: Appearance: PND11-040-74

Ammonium nitrate NH4NO3

33.6 percent N, half as ammonia, half as nitrate 50-kg polyethylene bags, 160.90 Kcs per 100 kg. Scaly, irregular chunks, bright orange-brown

Total nitrogen, minimum 33 percent

Moisture, max 1.5 percent

Particles smaller than 0.6 mm, max 8.0 percent greater than 5.0 mm, max 8.0 percent

greater than 10.0 mm, max 0.1 percent LA is physiologically neutral and cakes easily.

Other properties:

The bulk density is greater than 0.8 tons/m<sup>3</sup> Must be stored away from all organic materials:

flammable, class 1.

Producer:

Note:

Chemko Strazske, import

Urea: MO

Active ingredient:

CSN: 65 4908

Nutrient content:

Packaging/price: Appearance:

Urea  $CO(NH_2)_2$  (carbamide (diamide of carbonic acid)) 46 percent N in amide form

50-kg polyethylene bags, 217.90 Kcs per 100 kg Fine white granules, sometimes with yellow tint Total nitrogen, min 46 percent in dry state

Biuret, max 1.0 percent

Particles between 0.5 and 2.5 mm, min 90 percent

Flowability, min 92 percent

Other properties:

Physiologically neutral fertilizer. Bulk density 0.7

tons m

Producer:

Duslo Sala, CHZ CSSP Zaluzy, import

Anhydrous Ammonia

Active ingredient:

Preammonia in liquid form, NH3

Nutrient content: Packaging/price:

82.35 percent N

Transported and stored in special pressure containers, 211.10 Kcs per 100 kg of product in railroad tank cars.

Colorless liquid; changes in air to irritating gas Appearance:

with penetrating odor

NH3 content, min 99.0 percent, CSN: 65 1311:

material quality B

Does not corrode steel, attacks copper and its alloys. Other properties:

Must be introduced 10-15 cm below ground surface. When handling, special safety procedures must be followed. Average density about 0.6 tons/m3, depending on pressure and temperature, but tank must not be completely filled. Physiologically alkaline fertilizer.

CHZ CSSP Zaluzi, MCHZ Ostrava, Duslo Sala,

Chemko Strazske

**DAM 390** 

Appearance:

Producer:

PND 54-014-78:

Producer:

Ammonium nitrate NH4NO3 and urea CO(NH2)2in water Active ingredient:

solution

30 percent N, half in amide form, quarter as ammonia, Nutrient content:

quarter as nitrate

In railroad tank cars, 158.65 Kcs per 100 kg; Packaging/price:

in purchaser's tank trucks, 153.65 Kcs per 100 kg Transparent colorless liquid with mild ammonia odor

Nitrogen content, min 29.5 percent by weight

pH, 6.0-7.5

Free ammonia, max 0.1 percent

Physiologically neutral fertilizer. Does not develop Other properties:

pressure during storage. Average density 1.3 tons/m3

with content of 390 kg of nitrogen.

Corrodes steel only slightly, attacks copper and its alloys. Plastic, rubber and wood are resistant. Solidifies at -10°C without damage to containers and tubing, liquefies again when temperature is raised.

Duslo Sala, Chemko Strazske, SCHZ Lovosice, VCHZ Synthesia Pardubice-Semtin, MCHZ Ostrava

Ammonia Water

Solution of ammonia in water  $\mathrm{NH_{4}OH}$ Active ingredient: 25 percent  $NH_3$ , i.e. 20.5 percent NNutrient content:

Transported and stored in steel or aluminum containers Packaging/price:

with a specified NH3 vapor pressure, 67.50 Kcs per

100 kg in railroad tank car.

Colorless liquid with strong ammonia smell Appearance:

NH3 content, min 24 percent by weight, lower content PND 33-466-68

requires purchaser's agreement

#### FUR UFFICIAL USE UNLT

Other properties: Physiologically alkaline fertilizer. When intro-

duced into the soil below the surface, may be used full strength; when fertilizing grass cover at the surface, concentration of NH<sub>3</sub> must be decreased to

1 percent.

Note: Not produced as main product; it is an industrial

byproduct and is used only in the vicinity of the

source.

Amoniakat

Note:

Active ingredient: Ammonium nitrate NH4NO3 and ammonia water NH4OH Nutrient content: 38.5 percent N in summer, 40.6 N in winter Packaging/price: In railway tank cars, 153.35 Kcs per 100 kg.

Appearance: Colorless transparent liquid with strong smell of

Colorless transparent liquid with strong smell of ammonia, develops a certain excess pressure above

the surface.

Note: Shipped in accordance with PND 54-101-72 to foreign

and domestic fertilizer producers for further processing, because when used directly for fertilizing it requires pressure vessels for transport and storage and special machines for application below

the ground surface.

Producer: Duslo Sala

Single-Component Phosphate Fertilizers

Powdered Superphosphate -- SF pr.

Active ingredient: Calcium dihydrogen phosphate CA(H<sub>2</sub>PO<sub>4</sub>)<sub>2</sub> (monocalcium

phosphate)

Nutrient content: 16.5 percent P<sub>2</sub>O<sub>5</sub> (7.3 percent P), Afrika type;

19.5 percent P205 (8.6 percent P), Kola type

Packaging/price: Bulk, 69.50 Kcs per 100 kg (Afrika);

89.70 Kcs per 100 kg (Kola)
Gray or brownish powder with acrid odor

Appearance: Gray or brownish powder with acrid odor
CSN 55 4910 Water-soluble P<sub>2</sub>O<sub>5</sub>, min 15 percent (Afrika),
min 18 percent (kola)

Free P205, max 5.0 percent Afrika, max 6.0 percent

Ko1a

Moisture, max 13.5 percent Afrika, max 12.5 percent

Kola

Other properties: Simple superphosphate is a physiologically acidic

fertilizer. Bulk density up to 1.1 tons/m3

The type (Afrika or Kola) depends on the source of

the phosphate used in its production

Producers: PrcHZ Prerov, SCHZ Lovosice

Granular Superphosphate--SF gr

Calcium dihydrogen phosphate Ca(H2PO4)2 (monocalcium Active ingredient:

phosphate), with small percentage of ammonia nitrogen

18 percent P2O5(Afrika), 19.5 percent P2O5 (Kola), Nutrient content: 2-4 percent N (8 percent P (Afrika), 8.6 percent P

(Kola))

Bulk, 88.10 Kcs (Afrika), Packaging/price:

104.20 Kcs (Kola) per 100 kg

Whitish, grayish or brownish granules, sharp smell Appearance:

P205 soluble in 2 percent citric acid, CSN 65 4910

min 17 percent (Afrika), min 19.0 percent (Kola)

Free P<sub>2</sub>O<sub>5</sub>, max 2.5 percent

Particles between 1 and 4 mm, min 90 percent

under 1 mm, max 3.0 percent over 4 mm, max 7 percent over 10 mm, max 0.5 percent

Mechanical strength of granules min 97 percent

Physiologically acidic fertilizer.

Density about 0.9 tons/m3

The type may be Afrika or Kola depending on the

phosphate used for production. PrCHZ Prerov, SCHZ Lovosice

Fine Granular Superphosphate--SFkr

Other properties:

Note:

Producer:

Calcium dihydrogen phosphate Ca(H2PO4)2 (monocalcium Active ingredient:

phosphate), and small percentage of ammonia nitrogen 18 percent P2O5, 2-4 percent N, (8 percent P) Afrika;

Nutrient content: 19.5 percent P205, 2-4 percent N (8.6 percent P) Kola

Bulk, 88.10 Kcs per 100 Kg Afrika, Packaging price:

104.20 Kcs per 100 kg Kola

Fine grayish or brownish granules, sharp smell Appearance:

P205 soluble in citric acid, min 17 percent (Afrika), PND 27-033-76a

min 19 percent (Kola); Free P2O5, max 2.5 percent and 58-600-76

Particles smaller than 2 mm, min 90 percent

between 2 and 5 mm, max 10 percent

Physiologically acidic fertilizer. Bulk density about 0.9 tons/m3

PrCHZ Prerov, SCHZ Lovosice Producer:

Semidecomposed Superphosphate--REFOS

Calcium dihydrogen phosphate Ca(H2PO4)2 (monocalcium Active ingredient:

phosphate), and ground phosphate

Nutrient content:

Other properties:

19 percent P<sub>2</sub>O<sub>5</sub> (8.4 percent P) Bulk, 76.80 Kcs per 100 kg

Packaging/price: Appearance:

SCN 65 4910:

Fine gray or brownish material, sharp odor.

Total P205, min 17.8 percent Water soluble, min 11.5 percent Free P205, max 4.0 percent

Moisture, max 15 percent

Physiologically acidic fertilizer Other properties:

VCHZ Synthesia Pardubice-Semtin, in Kolin plant. Producer:

#### FUR UPPICIAL USE UNLI

Ground Phosphate and Hyperphosphate

Active ingredient: Tricalcium phosphate Ca3(PO4)2 and its mineralogical

forms distinguishable by place of occurrence

Nutrient content: 29 percent P<sub>2</sub>O<sub>5</sub> (12.8 percent P)

Packaging/price: 50-kg paper bags, 100.10 Kcs per 100 kg.

Granulated hyperphosphate 99.50 Kcs per 100 kg. Fine gray or grayish-brown powder without odor,

Appearance: Fine gray or grayish-brown very flowable and powdery

TPD 9-048-61 or Total P<sub>2</sub>O<sub>5</sub>, min 28.0 percent foreign supplier's Hyperphosphate, min 60 percent of P<sub>2</sub>O<sub>5</sub> soluble

foreign supplier's Hyperphosphate, min 60 percent of  $P_2$ 0 specifications: in 2 percent citric acid

Moisture, max 5.0 percent

Retained on screen
0.2mm, max 20 percent

0.5mm, max 2.0 percent
1.0mm, max 0.5 percent

Other properties: Physiologically neutral fertilizer

Bulk density: 1.2 tons/m<sup>3</sup>

Producer: Ground phosphate produced by CHZJD Bratislava, hyperphosphates are imported, primarily in granular

form.

Enriched Superphosphate--SFO

Active ingredient: Calcium dihydrogen phosphate Ca(H2PO4)2 (monocalcium

phosphate)

Nutrient content: 25 percent P<sub>2</sub>0<sub>5</sub> (11.0 percent P)

Packaging/price: Bulk, 127.20 Kcs per 100 kg
Appearance: Loose gray powder with characteristic odor

CSN 65 4911: Water-soluble P<sub>2</sub>O<sub>5</sub>, min 24.5 percent

Free P<sub>2</sub>O<sub>5</sub>, max 6 percent Moisture, max 12 percent

Other properties: Physiologically mildly acidic fertilizer

Producer: Was temporarily produced by CHZJD Bratislava, now

imported

Triple Superphosphate--SFT

Active ingredient: Calcium dihydrogen phosphate Ca(H2PO4)2 (monocalcium

phosphate)

Nutrient content: 44 percent P<sub>2</sub>O<sub>5</sub> (19.3 percent P)
Packaging/price: Bulk, 235.30 Kcs per 100 kg

Packaging/price: Bulk, 235.30 Kcs per 100 kg
Appearance: Gray powder with characteristic odor

PND 9-207-76: P<sub>2</sub>0<sub>5</sub> soluble in 2 percent citric acid, min 44 percent

Water-soluble P2O5, min 37.5 percent

Free P205, max 6 percent

Particles larger than 5 mm, max 5 percent

Moisture, max 12 percent

Other properties: Physiologically weakly acidic fertilizer.

Bulk density over 0.9 tons/m3

Producer: CHZJD Bratislava

В

Granulated Triple Superphosphate

Active ingredient:

Calcium dihydrogen phosphate Ca(H2PO4)2 (monocalcium

phosphate)

Nutrient content:

45-49 percent  $P_2O_5$  (19.8-21.5 percent P)

Packaging/price:

50 kg paper bags, 240.30-264.70 Kcs per 100 kg

Appearance:

Gray irregular granules

Foreign supplier's specifications:

Acceptable P2O5, min 45.0 percent to min 49 percent Water-soluble P205, min 85 percent of acceptable P205

Particles larger than 4 mm, max 5 percent

2-4 mm, min 50 percent 1-2 mm, min 40 percent under 1 mm, max 5.0 percent

Other properties:

Physiologically weakly acidic

Producer:

Import

Single-Component Potassium Fertilizers

Potassium Salt 40 Percent--DS 40

Active ingredient:

Potassium chloride KCl

Nutrient content:

40 percent K<sub>2</sub>O (33.2 percent K)

Packaging/price:

Bulk, 59.30 Kcs per 100 kg

Appearance:

Fine white, gray or pinkish crystalline salt.

CSN 65 4920:

K20, min 38.0 percent

Moisture, max 1.0 percent

Retained on 5 mm screen, 0 percent on 3 mm screen, max 5 percent

Other properties:

Physiologically acidic fertilizer. Bulk density over 1.0 tons/m<sup>3</sup>

Producer:

Import

Potassium Salt 50 Percent--DS 50

Active ingredient:

Potassium chloride KC1

Nutrient content:

50 percent K<sub>2</sub>O (41.5 percent K)

Packaging/price:

Bulk, 70.10 Kcs per 100 kg

Appearance:

Fine white, gray or pinkish crystalline salt

 $K_20$ , min 48.0 percent

CSN 65 4920:

Moisture, max 1.0 percent

Retained by 5 mm screen, 0 percent

by 3 mm screen, max 5.0 percent

Other properties:

Physiologically acidic fertilizer. Bulk density

over 1.0 tons/m<sup>3</sup>

Sometimes also supplied in granular form

Producer:

Import

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### APPROVED FOR RELEASE: 2007/02/08: CIA-RDP82-00850R000300080005-5

#### FUR UFFICIAL USE UNLI

Potassium Salt 60 Percent--DS 60

Active ingredient:

Potassium chloride KCl

Nutrient content: Packaging/price: Appearance:

60 percent K<sub>2</sub>O (49.8 percent K) Bulk. 78.50 Kcs per 100 kg Fine whitish crystalline salt

SCN 65 4920:

K<sub>2</sub>O, min 58 percent

Moisture, max 0.5 percent

Retained by 5 mm screen, 0 percent by 3 mm screen, max 5.0 percent

Other properties:

Physiologically acidic fertilizer

Note:

When product is supplied with guaranteed minimum K<sub>2</sub>O content of 56 percent, price is 56.50 Kcs per

100 kg.

Producer: Import

Potassium Salt Granulated 60 Percent--DS 60 gr

Active ingredient:

Potassium chloride KCl

Nutrient content: Packaging/price:

60 percent K<sub>2</sub>O (49.8 percent K) Bulk, 83.30 Kcs per 100 kg Irregular whitish granules

Appearance: CSN 65 4920:

K2O, min 58 percent

Moisture, max 0.5 percent

Retained by 4 mm, screen, max 4.0 percent Particles smaller than 0.5 mm, max 10.0 percent

Other properties:

Physiologically acidic fertilizer

Producer:

Potassium Sulfate--SD

Active ingredient:

Potassium sulfate K2SO4

Nutrient content: Packaging/price:

50 percent K<sub>2</sub>0 (41.5 percent K) Bulk, 100.50 Kcs per 100 kg White or grayish powder

Appearance: CSN 65 4920:

K20, min 48.0 percent Moisture, max 1.0 percent

Other properties:

Physiologically acidic fertilizer. Bulk density 1.3 tons/m<sup>3</sup>

Note:

Applied to chlorine-sensitive crops

Producer:

Import

Import

Magnesium and Magnesium-Potassium Fertilizers

Kieserit Concentrate

Active ingredient:

Magnesium sulfate MgSO4 with water of crystalliza-

tion, potassium chloride KCl

Nutrient content:

18 percent MgO (11 percent Mg) Bulk, 37.70 Kcs per 100 kg

Packaging/price:

10

Appearance:

Whitish crystals

Technical specifications: According to foreign supplier Physiologically acidic fertilizer

Other properties: Note:

Contains 45-55 percent MgSO4, applied only to fields

with magnesium deficiency.

Also contains at least 10 percent  $K_2$ 0 (8 percent K)

Producer:

Kamex

Active ingredient: Nutrient content:

Potassium chloride KCl and magnesium sulfate  $MgSO_4$ 40 percent K20 and 4 percent Mg0 (33.2 percent K,

2.4 percent Mg)

Packaging/price:

Bulk, 63.70 Kcs per 100 kg White to grayish crystals K<sub>2</sub>O, min 38.0 percent

Appearance: CSN 65 4920:

Moisture, max 1.0 percent Retained by 5 mm screen, 0 percent Grains 3-5 mm, max 5.0 percent

Other properties: Producer:

Physiologically acidic fertilizer

Import

Import

Magnesium Kainit--Mg Kainit

Active ingredient:

Mixture of salts, primarily potassium chloride

KC1 and magnesium sulfate MgSO4 14 percent K20 and 6 percent Mg0

Nutrient content:

(11.6 percent K, 3.6 percent Mg)

Packaging/price:

Other properties:

Bulk, 31.70 Kcs per 100 kg

Appearance: CSN 65 4920 Mixture of white, gray, reddish-brown to brown crystals

K20, min 13.0 percent Moisture, max 1.5 percent

Physiologically acidic fertilizer

Bulk density 1.15 tons/m<sup>3</sup>

Producer:

Import

Granular Multicomponent Fertilizers

NPK 1

Active ingredient:

Ammonium, potassium and calcium salts of nitric,

phosphoric and hydrochloric acids with more than

half of P205 water-soluble

Nutrient content:

12.5 percent N, 19 percent P<sub>2</sub>O<sub>5</sub>, 19 percent K<sub>2</sub>O (8.4 percent P, 15.8 percent K) 50-kg polyethylene bags, 206.20 Kcs per 100 kg

Packaging/price:

Gray granules

Appearance: PND 23-032-69:

Total N, min 12.0 percent, total  $P_2O_5$ 19±1 percent, P205 soluble in citric acid,

min 17 percent, water-soluble P2O5, min 8.0 percent,

total K<sub>2</sub>O, 19±1 percent

1.1

#### FUR UFFICIAL USE UNLY

Moisture, max 1.5 percent

Granules from 1 to 5 mm, min 90 percent Particles smaller than 1 mm, max 3 percent

larger than 10 mm, max 0.5 percent larger than 5 mm, max 7.0 percent

Other properties:

Nitrogen percent about 60 percent as ammonia,

40 percent as nitrate.

Physiological reaction mildly acidic.

Bulk density over 0.9 tons/m

Producer:

SCHZ Lovisice

NPK 2A Demetra, Synferta Z

Active ingredient:

Ammonium, potassium and calcium salts of nitric, phosphoric, sulfuric and hydrochloric acids with

low percentage of water-soluble P2O5

Nutrient content:

11.2 percent N, 11.2 percent P2O5, 15.2 percent K2O

(4.8 percent P, 12.5 percent K)

Packaging/price:

50-kg polyethylene bags, 152.80 Kcs per 100 kg

Grayish granules

Appearance: PND 11-043-75:

Other properties:

Total N, min 10.7 percent

 $P_2O_5$  soluble in citric acid, min 10.6 percent

K20, min 13.8 percent

Total nutrients, min 36.6 percent Granules 1-5 mm, min 85 percent

Particles larger than 5 mm, max 12 percent smaller than 1 mm, max 3 percent

Flowability, min 80 percent

Mechanical strength of granules, min 97 percent About 53 percent of N as ammonia, remainder as nitrate. Physiological reaction mildly acidic.

Bulk density over 1.0 tons/m3

Producer:

Demetra by Chemko Strazske. Demetra RF, with increased  $P_2 O_5$  from addition of amofos [ammonium phosphate], also sometimes produced by Chemko. Synferta Z produced by VCHZ Synthesia Semtin-Pardubice according to PND 39-102-74 with 11.3 percent N, 11.3 percent P205 and 14.7 percent K20

NPK-NF

Active ingredient:

Ammonium, potassium and calcium salts of nitric, phosphoric and hydrochloric acids with half of P205

water-soluble

Nutrient content:

16 percent N, 16 percent P<sub>2</sub>O<sub>5</sub>, 16 percent K<sub>2</sub>O (7 percent P, 13.3 percent K)

50 kg polyethylene bags, 198.90 Kcs per 100 kg

Packaging/price: Whitish gray granules Appearance: CSN 65 4925:

N. min 15.3 percent P205soluble in citric acid, min 15.0 percent,

water soluble P2O5, min 8.0 percent

12

K20, min 15.0 percent

Total nutrients, min 48.0 percent

Particles smaller than 1 mm, max 3 percent larger than 10 mm, max 0.5 percent

Granules 1-4 mm, min 90 percent Flowability, min 90 percent

Other properties:

Up to 58 percent of nitrogen as ammonia, remainder as nitrate. Physiological reaction mildly acidic.

Bulk density 1.0 tons/m3

Producer:

Duslo Sala

GVH III-5

Active ingredient:

Ammonium, potassium and calcium salts of nitric, phosphoric, hydrochloric and sulfuric acids with high percentage of P2O5 in water-soluble form.

Nutrient content:

8.5 percent N, 17.5 percent P205, 17.5 percent K20 (7.7 percent P, 14.5 percent K)

Packaging/price: Appearance: PND 9-226-78:

Bulk, 205.40 Kcs per 100 kg Light gray to light brown granules

N, min 8.5 percent

P205 soluble in citric acid, min 17.5 percent

Water-soluble P205, min 14 percent

 $K_{20}$ , min 17.5 percent

Total nutrients, min 44 percent

Particles smaller than 1 mm, max 3 percent Granules 2-4 mm, min 80 percent

Retained on 10 mm screen, max 0.5 percent

Three-fourths of nitrogen as ammonia, remainder as Other properties:

nitrate. Physiological reaction neutral, sometimes

mildly acidic. Bulk density over 1.0 ton/m3 CHZJD Bratislava

Producer:

Granular Amofos

Ammonium salt of phosphoric acid with high percentage

of water-soluble P205

11.5 percent N, 49 percent P<sub>2</sub>0<sub>5</sub> (21.5 percent P)

Nutrient content: Packaging/price:

Active ingredient:

50 kg paper bags, 358.50 Kcs per 100 kg

Appearance:

Dark gray granules

Foreign supplier's specifications:

Water-soluble P205, min 38 percent

N, min 11 percent

Particles smaller than 1 mm, max 5 percent

Granules 1-4 mm, min 90 percent

Moisture, max 1 percent

Other properties:

Producer:

Physiologically neutral fertilizer Imported, sometimes as powder

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## APPROVED FOR RELEASE: 2007/02/08: CIA-RDP82-00850R000300080005-5

TOR OFFICIAL COL CITES

Granular Rekafos

Active ingredient:

Sodium and calcium phosphosilicates, 5Na<sub>2</sub>O·P<sub>2</sub>O<sub>5</sub>·SiO<sub>2</sub>

and 5CaO·P2O5·SiO2, and potassium chloride KCl

Nutrient content:

18 percent P205, 20 percent K20 (7.9 percent P,

16.7 percent K)

Packaging/price:

50 kg polyethylene bags, 159.20 Kcs per 100 kg

Appearance:

Gray-brown granules

Technical specifications: According to foreign supplier Other properties:

Rekafos is physiologically alkaline.

The P205 is soluble in 2 percent citric acid.

Producer:

Liquid Multicomponent Fertilizers

NP Fertilizer 8-24-0

Active ingredient:

Ammonium hydrogen and dihydrogen phosphate (NH4)2HPO4

and NH4H2PO4

Nutrient content:

Packaging/price:

8 percent N, 24 percent P205 (10.5 percent P) Transported and stored in plastic or steel vessels. Price 202.90 Kcs per 100 kg in railway tank cars,

186.70 per 100 kg in purchaser's tank truck Colorless or greenish to brownish liquid with

Appearance:

slight turbidity

PND 9-261-78:

N. min 7.3 percent by weight  $P_2O_5$ , min 23 percent by weight

pH, 6.0-7.0

Other properties:

Solidifies below -8°C, melts as temperature rises above freezing point. Average density 1.285 tons per m<sup>3</sup>. Physiological reaction neutral. Color depends on source of phosphoric acid used in pro-

duction.

Producer:

CHZJD Bratislava under the names of Fostim, and

Fosfa Postorna

14

Same analysis	Ñ	Sales Prices of Nutrients in Fertilizers	S OI NUCLIEU								•	
Sinn amonay	1 -	Section Property	Referie	Cens zs	Obsa	živiny v		చ్ =	na Kčs za 1g živiny		ъ.	Name of fertilizer Packaging
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State and methods   Section   Sect	1										φ.	Nutrient content, percent
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LAY 25 % Per vecial 1299 - 25.2 - 4.80 - 1.00		Dusikate vapno		1,050	7.9		- 	5.17	li	1	; •	Ammonding sulfate
LAN 20 % Pre-vectors 1459- 305 - 478 - 478 - 11.  LAND 27.5 % Pre-vectors 1459- 305 - 478 - 478 - 11.  LAND 27.5 % Pre-vectors 1199- 375 - 478 - 11.  LAND 27.5 % Pre-vectors 1199- 375 - 478 - 11.  DAM-300 kelez. cisterna 2111- 82.3 - 2.56 - 4.74 - 11.  Conviously declarated and 2111- 82.3 - 2.59 - 11.  Conviously declarated and 2111- 82.3 - 2.59 - 11.  Superficial provide ulockery 881 185 4.21 - 11.  Superficial grain, voltre ulockery 881 185 - 4.40 - 11.  Note ulockery 788 19.5 - 4.40 - 11.  Superficial provide ulockery 788 19.5 - 4.40 - 11.  Superficial provide ulockery 788 29 - 4.40 - 11.  Superficial provide ulockery vector 1272 29.3 - 3.42 - 7.  Superficial voltre ulockery 2403 29 - 3.42 - 7.  Superficial voltre ulockery 2403 29 - 3.42 - 7.  Superficial voltre ulockery 333 44 - 5.34 - 7.  Superficial voltre ulockery 333 44 - 5.34 - 7.  Superficial voltre ulockery 371 25 - 3.42 - 7.  Superficial voltre ulockery 371 25 - 3.42 - 7.  Superficial voltre ulockery 371 25 - 3.42 - 7.  Superficial voltre ulockery 371 25 - 3.42 - 7.  Superficial voltre ulockery 371 25 - 3.42 - 7.  Superficial voltre ulockery 371 25 - 3.42 - 7.  Superficial voltre ulockery 371 25 - 3.42 - 7.  Superficial voltre ulockery 371 25 - 3.42 - 7.  Superficial voltre ulockery 371 25 - 20. 1.  Superficial voltre ulockery 371 1.  Superficial voltre u		LABOUR Vaponary		1200 -	25.2	I	1	68	1	1	•	Control mornous
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National Superiority		Chevicova vous	A-l chiena	2 765	) }	1		2,5	ı		ż	Allily and ammonta
Superfoldlit pr.         1 votre utodeny         695         165.5         -         4.21         Im.           Adrika         Superfoldlit pr.         volre utodeny         897         19.5         -         4.60         Im.           Superfoldlit gran.         volre utodeny         881         18         -         4.69         -         0.           Afrika         volre utodeny         1042         19.5         -         4.04         -         p.           Refor         met y fortist         papierove vrecia         1001         29.3         -         3.42         -         r.           Hyperfordist         papierove vrecia         1272         29         -         3.43         -         t.           Superfordist         papierove vrecia         1272         29         -         3.43         -         t.           Superfordist         papierove vrecia         1272         29         -         3.43         -         t.           Superfordist         papierove vrecia         1272         29         -         3.43         -         t.           Superfordist         volne utodeny         2333         -         4         -         5.		DAM-390 Amoniakát	zelez, disterna	1533.50	39	1 1	1 1	3,93	- 1	 I	<del>-</del> i	Ammonia water
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Milest   Continued   Continu		Defor		768	i	6	ı	1	2	ı	· • 1	Osessad aboonhote
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granulovarity         papertone vector         792, —         27         C.           Superfootfit         Justine uloderny         2333, —         44         —         5.39         —         11.           Superfootfit         Justine uloderny         2403, —         45         —         5.39         —         11.           Superfootfit         volne uloderny         2403, —         45         —         5.34         —         V.           Trougly         gan         volne uloderny         2403, —         46         —         1.48         Z.           Draselind         volne uloderny         701, —         —         40         —         1.49         Z.           Draselind         volne uloderny         701, —         —         50         —         1.40         Z.           Draselind         volne uloderny         785, —         —         60         —         1.40         Z.           Braselind         volne uloderny         1005, —         —         60         —         1.31         2.           Stran draseling         volne uloderny         1005, —         —         60         —         1.40         Z.           Stran draseling         <	_	Hyperfosfát	1	ş		Ę		1	171	-	0	Grandated hyperphoto
Optobalenty         papierrové vrecia         1272.         25         —         5.09         —         11.           Superfositi         1 volne uločený         2433.         —         44         —         5.35         —         V.           Rupilýgran.         volne uločený         2403.         —         45         —         5.34         —         X.           Draselná         volne uločený         2403.         —         40         —         1,48         Z.           Draselná         volne uločený         701.         —         40         —         1,49         Z.           Draselná         volne uločený         785.         —         60         —         1,40         Z.           Sina draselný         volne uločený         333.         —         60         —         1,31         2.           Sina draselný         volne uločený         537.         —         40         —         1,46         4.           Sina draselný         volne uločený         337.         —         40         —         1,39         3.           Sina draselný         volne uločený         317.         —         40         —         1,46         4. </td <th></th> <th>granulovany Superfortit</th> <th>papierove vrecu</th> <td>1,044</td> <td>I</td> <td>Ç</td> <td></td> <td></td> <td>ì</td> <td></td> <td></td> <td>Entitined superphosphate</td>		granulovany Superfortit	papierove vrecu	1,044	I	Ç			ì			Entitined superphosphate
Superfortifit         1 volve utodenty         2353         44         -         5.35         -         V.           superfortifit         volve utodenty         2403         -         45         -         5.34         -         X.           Darachind         volve utodenty         2403         -         40         -         1.48         X.           Drauchind         volve utodenty         2403         -         40         -         1.48         X.           Drauchind         volve utodenty         701         -         50         -         1.48         Z.           Drauchind         volve utodenty         785         -         60         -         1.31         2.           Drauching         volve utodenty         637         -         60         -         1.39         3.           Strant         volve utodenty         637         -         40         -         1.46         2.           MPR Saint         volve utodenty         637         -         -         60         -         1.39         3.           NPK 1         volve utodenty         1486         1112         112         17         4.         - </td <th></th> <th>obohatený</th> <th>papierové vrecia</th> <td>1272</td> <td>ı</td> <td>22</td> <td>ı</td> <td>i</td> <td>5,09</td> <td>i</td> <td>:</td> <td>IIIpie Superphosphate</td>		obohatený	papierové vrecia	1272	ı	22	ı	i	5,09	i	:	IIIpie Superphosphate
The color of the	_	Superfosfát				;			36.3		•	cranutar triple superpinospinate
State   Colored   Colore		trojitý	1 volne uložený	2353,-	ı	1	I	1	66,0	I	3	Potassium salt
Directing   Dire		Superiosisi trojitý grah.	voľne uložený	2403,-	i	45	ı	ı	5,3 <del>4</del>	i	×	Potassium sulfate
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Draseling   Volter windowns   701,		sof 40 %	volne ulobená	593,-	I	ı	Ş	ļ	1	<u>.</u>		Granular amofos
Drescind		sof 50 %	volne uložená	701,-	t	ı	20	ŧ	1	 9.	22	8-24-0 solution
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ZKvan, 8-24-0 4 zelez, cisterna 2029,- 8 24 5.16	<b>&gt;</b> 1	Account gran.	1 unfine utobenú	3106 -	<u>:</u>	9	3 1	4.24	5.53	1		
	N N N	Amoros gran.	4 voine mozeny	2029 -	} ∞	2 4	1	5,16	6.73	1		

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8480 CSO: 2402 END

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